

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

REGION III
1650 Arch Street
Philadelphia, PA 19103-2029

REGION V
77 West Jackson Boulevard
Chicago, IL 60604

IN THE MATTER OF:)	
)	
The Chemours Company)	
and)	FIRST AMENDMENT TO
E.I. du Pont de Nemours and Company)	ORDER ON CONSENT
1007 Market Street)	
Wilmington, DE 19898)	
)	Proceeding under Section 1431(a)(1)
Respondents.)	of the Safe Drinking Water Act,
)	42 U.S.C. § 300i(a)(1)
Washington Works Facility)	
Route 892 South)	
Washington, WV 26181)	
)	Docket Nos. SDWA-03-2016-0127-DS
)	SDWA-05-2016-0001

Index to Administrative Record

1. Andrew S. Hartten, Project Director, DuPont, "Amended 3Q05, and 4Q05 and 1Q06 Residential Sampling Results, West Virginia and Ohio DuPont Washington Works, Washington, WV (EPA Docket ID Number OPPT 2004-0113 PFOA Site-Related Environmental Assessment Program)," submitted to Chad Board, West Virginia Department of Environmental Protection (April 5, 2006).
2. Antonia M. Calafat et al., *Serum Concentrations of 11 Polyfluoroalkyl Compounds in the U.S. Population: Data from the Nat'l Health and Nutrition Examination Surv. (NHANES) 1999-2000*, 41 ENVTL. SCI. TECH. 2237 (2007), available at <http://dx.doi.org/10.1021/es062686m>.
3. ATHENS COUNTY, OHIO CENSUS DATA, U.S. CENSUS BUREAU, <http://factfinder.census.gov/bkmk/table/1.0/en/PEP/2012/PEPAGESEX/05000000US39009> (last visited July 20, 2016).
4. Avanası et al., *Variability and epistemic uncertainty in water ingestion rates and pharmacokinetic parameters, and impact on the association between perfluorooctanoate and preeclampsia in the C8 Health Project population*, 146 ENVTL. RES. 299-307 (April 2016), <http://www.sciencedirect.com/science/article/pii/S0013935116300111>.

5. Belpre, Ohio City Public Water System SDWIS Information, U.S. ENVTL. PROT. AGENCY, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:200::NO::> (select “OH” in the “Primacy Agency” drop-down menu; then search “Belpre” in the “Water System Name” field) (last visited July 22, 2016).
6. Braun et al., *Prenatal perfluoroalkyl substance exposure and child adiposity at 8 years of age: The Home Study*, 24 OBESITY 231-37 (2015).
7. C8 Science Panel, *Probable Link Reports*, http://www.c8sciencepanel.org/prob_link.html (last updated Nov. 28, 2013).
8. C.J. Sakr et al., *Longitudinal Study of Serum Lipids and Liver Enzymes in Workers with Occupational Exposure to Ammonium Perfluorooctanoate*, 49 J. OCCUP. ENVTL. MED. 1294 (2007), <https://www.ncbi.nlm.nih.gov/pubmed/17693785>.
9. Darrow et al., *Serum Perfluorooctanoic Acid and Perfluorooctane Sulfonate Concentrations in Relation to Birth Outcomes in the Mid-Ohio Valley, 2005-2010*, 121 ENVTL. HEALTH PERSP. (2013).
10. DA Savitz, *Perfluorooctanoic acid exposure and pregnancy outcome in a highly exposed community*, 23 EPIDEM. 386-92 (2012).
11. D.J. Paustenbach, J.M. Panko, P.K. Scott & K.M. Unice, *A methodology for estimating human exposure to perfluorooctanoic acid (PFOA): A retrospective exposure assessment of a community (1951-2003)*, 70 J. TOXICOL. ENVTL. HEALTH 28--57 (2007).
12. DuPont Remediation Group, *Data Assessment DuPont Washington Works (OPPT-2004-0113 PFOA Site-related Environmental Assessment Program)* (2008).
13. DuPont, Washington Works Blood Sampling Program 141, A.R. 226-1382 (1981).
14. DuPont, C-8 Effects on Pregnancy 144, A.R. 226-1383 (1981).
15. DuPont, Pregnancy Outcome Questionnaire, A.R. 226-1384 (1981).
16. DuPont, W. Va. Dep’t. of Env’tl. Protection & W. Va. Dep’t. of Health & Human Resources, “Consent Order issued pursuant to Articles 5 and 12, Chapter 22 and Article 1, Chapter 16 of the West Virginia Code,” (Nov. 15, 2001).
17. EA Emmett, *Community Exposure to Perfluorooctanoate: Relationships Between Serum Concentrations and Exposure Sources*, 48 J. OCCUP. & ENVTL. MED. 759 (2006), <http://www.ncbi.nlm.nih.gov/pubmed/16902368>.
18. Frisbee et al., *Perfluorooctanoic acid, perfluorooctanesulfonate, and serum lipids in children and adolescents: Results from the C8 Health Project*, 164 ARCH PEDIATR. ADOLESC. MED. 860 (2010).

19. GB Post, *Perfluorooctanoic acid (PFOA), an emerging drinking water contaminant: a critical review of recent literature*, 116 ENVTL. RES. 93–117, <http://dx.doi.org/10.1016/j.envres> (last visited July 2012).
20. Hyeong-Moo Shin et al., *Erratum: Perfluorooctanoic Acid Concentrations for Participants in the C8 Health Project*, 121 ENVTL. HEALTH PERSP. A113 (2013), <http://ehp.niehs.nih.gov/1306804>.
21. K. Kannan, S. Corsolini, J. Falandysz, G. Oehme, S. Focardi, & J.P. Giesy, *Perfluorooctanesulfonate and related fluorinated hydrocarbons in marine mammals, fishes, and birds from coasts of the Baltic and the Mediterranean Seas*, 36 ENVTL. SCI. TECH., no. 15, (2002), at 3210-16.
22. K. Kannan, L. Tao, E. Sinclair, S.D. Pastva, D.J. Jude & J.P. Giesy, *Perfluorinated compounds in aquatic organisms at various trophic levels in a Great Lakes food chain*, 48 ARCH. ENVTL. CONTAM. TOXICOL., no. 4, (2005), at 559-66.
23. K.L. Davis, M.D. Aucoin, B.S. Larsen, M.A. Kaiser, A.S. Hartten, *Transport of ammonium perfluorooctanoate in environmental media near a fluoropolymer manufacturing facility*, 67 CHEMOSPHERE (2011-2019) 2007.
24. K. Steenland, L. Zhao, & A. Winquist, *A cohort incidence study of workers exposed to perfluorooctanoic acid (PFOA)*, 72 OCCUP. ENVTL. MED. 373-80 (May 2015).
25. Kate Hoffman et al., *Private Drinking Water Wells as a Source of Exposure to Perfluorooctanoic Acid (PFOA) in Communities Surrounding a Fluoropolymer Production Facility*, 119 ENVTL. HEALTH PERSP. 92 (2011), <http://ehp.niehs.nih.gov/1002503>.
26. Letter from Craig W. Butler, Dir., Ohio Env'tl. Prot. Agency, to Peter Grevatt, OGWDW Organizer, U.S. Env'tl. Prot. Agency (May 18, 2016) (on file with Counsel) (requesting EPA amend the 2009 consent order with E.I. du Pont de Nemours and Co.).
27. Letter from Rahul Gupta, Comm'r, W. Va. Bureau of Pub. Health, to Karen Johnson, Chief, Ground Water Enf't Branch, U.S. Env'tl. Prot. Agency (Apr. 4, 2016) (on file with Counsel) (requesting EPA amend the 2009 consent order with E.I. du Pont de Nemours and Co.).
28. Little Hocking, Ohio Water/Sewer Association SDWIS Information, U.S. Env'tl. Prot. Agency, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "OH" in the "Primacy Agency" drop-down menu; then search "Little Hocking" in the "Water System Name" field) (last visited July 22, 2016).
29. Lopez-Espinosa et al., *Perfluoroalkyl Substances, Sex Hormones, and Insulin-like Growth Factor-1 at 6–9 Years of Age: A Cross-Sectional Analysis within the C8 Health Project*, 124 ENVTL. HEALTH PERSP. 1289 (Aug. 2016).

30. Lubeck PSD SDWIS Information, U.S. Env'tl. Prot. Agency,
<https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "WV" in the "Primacy Agency" drop-down menu; then search "Lubeck" in the "Water System Name" field) (last visited July 22, 2016).
31. Marietta, Ohio SDWIS Information, U.S. Env'tl. Prot. Agency,
<https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "OH" in the "Primacy Agency" drop-down menu; then search "Marietta" in the "Water System Name" field) (last visited July 22, 2016).
32. Mason County, West Virginia SDWIS Information, U.S. Env'tl. Prot. Agency,
<https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "WV" in the "Primacy Agency" drop-down menu; then search "Mason County" in the "Water System Name" field) (last visited July 22, 2016).
33. Meigs County, Ohio Census Data, U.S. Census Bureau,
<http://factfinder.census.gov/bkmk/table/1.0/en/PEP/2012/PEPAGESEX/0500000US39105> (select "OH" in the "Primacy Agency" drop-down menu; then search "Meigs" in the "County" field) (last visited July 20, 2016).
34. MJ Lopez-Espinosa, D. Mondal, B. Armstrong, MS Bloom & T. Fletcher, *Thyroid function and perfluoroalkyl acids in children living near a chemical plant*, 120 ENVTL. HEALTH PERSP. 1036-41 (2012).
35. M.L. Hanson, J. Small, P.K. Sibley, P.K., T.M. Boudreau, R.A. Brain, S.A. Mabury & K.R. Solomon, *Microcosm Evaluation of the fate, toxicity, and risk to aquatic macrophytes from perfluorooctanoic acid (PFOA)*, 49 ARCH. ENVTL. CONTAM. TOXICOL., no. 3, (2005) at 307-16.
36. N. Fitz-Simmon et al., *Reductions in Serum Lipids with a 4-year Decline in Serum Perfluorooctanoic Acid and Perfluorooctanesulfonic Acid*, 24(6) EPIDEM. 941 (Nov. 2013).
37. N. Wang., B. Szostek, R.C. Buck, P.W. Folsom, L.M. Sulecki, V. Capka, W.R. Berti & J.T. Gannon, *Fluorotelomer alcohol biodegradation-direct evidence that perfluorinated carbon chains breakdown*, 39 ENVTL. SCI. TECHNOL., no. 19, 2005, at 7516-28.
38. Office of Water, U.S. Env'tl. Prot. Agency, *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)* (2016) (including Health Effects Support Document), https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf.
39. Office of Water, U.S. Env'tl. Prot. Agency, *Health Effects Support Document for Perfluorooctanoic Acid (PFOA)* (2016).
40. Office of Water, U.S. Env'tl. Prot. Agency, *Provisional Health Advisories for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS)* (2009) (including Administrative Record

thereto), <https://www.epa.gov/sites/production/files/2015-09/documents/pfoa-pfos-provisional.pdf>.

41. Pomeroy Village, Ohio SDWIS Information, U.S. Env'tl. Prot. Agency, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "OH" in the "Primacy Agency" drop-down menu; then search "Pomeroy Village" in the "Water System Name" field) (last visited July 22, 2016).
42. The Chemours Co. was incorporated on 2/18/14. The articles of incorporation can be order for a fee at <https://icis.corp.delaware.gov/Ecorp/EntitySearch/NameSearch.aspx>.
43. Ryan Seals et al., *Accumulation and Clearance of Perfluorooctanoic Acid (PFOA) in Current and Former Residents of an Exposed Community*, 119 ENVTL. HEALTH PERSP. (2011).
44. Shin, *Environmental fate and transport modeling for perfluorooctanoic acid emitted from the Washington Works Facility in West Virginia*, 45 ENVTL. SCI. TECHNOL. 1435-42 (2011).
45. Sec. & Exch. Comm'n, Separation Agreement for E.I. DuPont de Nemours Co. & Chemours Co. (2015).
46. State of Delaware, Record of Incorporation, E.I. DuPont de Nemours & Co. (Sept. 4, 1915).
47. Steenland, *Cohort mortality study of workers exposed to perfluorooctanoic acid*, 176 AM J. EPIDEM. 176 (2012).
48. Steenland, *Association of perfluorooctanoic acid and perfluorooctane sulfonate with serum lipids among adults living near a chemical plant*, 170 AM J. EPIDEM. 1268 (2009).
49. Stephanie J. Frisbee et al., *Perfluorooctanoic Acid, Perfluorooctanesulfonate, and Serum Lipids in Children and Adolescents: Results from the C8 Health Project*, 164 ARCHIVES PEDIATRIC & ADOLESCENT MED. 860 (2010), <http://www.ncbi.nlm.nih.gov/pubmed/20819969>.
50. Stephanie J. Frisbee et al., *The C8 Health Project: Design, Methods, and Participants*, 117 Env'tl. Health Persp. 1873 (2009), <http://dx.doi.org/10.1289/ehp.0800379>.
51. Steenland et al., *Ulcerative Colitis and Perfluorooctanoic Acid (PFOA) in a Highly Exposed Population of Community Residents and Workers in the Mid-Ohio Valley*, 121 ENVTL. HEALTH PERSPECT. 900 (2013).
52. T. Fletcher et al., *Associations between PFOA, PFOS and changes in the expression of genes involved in cholesterol metabolism in humans*, 57-58 ENVTL. INT. 2-10 (2013).
53. Tupper Plains/Chester, Ohio Water District SDWIS Information, U.S. Env'tl. Prot. Agency, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "OH" in the "Primacy Agency" drop-down menu; then search "Tupper Plains/Chester" in the "Water System Name" field) (last visited July 22, 2016).

54. *U.S. v. E.I. du Pont de Nemours Co.*, No. 6:13-cv-27030 (S.D.W.V. Jan. 30, 2015). LDAR Consent Decree Notification of Transfer of Ownership.
55. U.S. Env'tl. Prot. Agency, Delegation of Authority, Delegation No. 1200-TN-350 (May 11, 1994).
56. U.S. Env'tl. Prot. Agency, Order on Consent, *In the Matter of: E.I. duPont de Nemours & Co.*, Docket Nos. SDWA-03-2002-0019 and SDWA-05-2002-0001 (Mar. 14, 2002).
57. U.S. Env'tl. Prot. Agency, Order on Consent, *In the Matter of: E.I. duPont de Nemours & Co.*, Docket Nos. SDWA-03-2007-0039-D and SDWA-05-2007-0001 (Nov. 20, 2006).
58. U.S. Env'tl. Prot. Agency, Order on Consent, *In the Matter of: E.I. duPont de Nemours & Co.*, Docket Nos. SDWA-03-2009-0127-DS and SDA-05-2009-0001 (Mar. 11, 2009).
59. Valentina Gallo et al., *Serum Perfluorooctanoate (PFOA) and Perfluorooctane Sulfonate (PFOS) Concentrations and Liver Function Biomarkers in a Population with Elevated PFOA Exposure*, 120 ENVTL. HEALTH PERSP. 655 (2012), <http://ehp.niehs.nih.gov/1104436>.
60. V. Barry et al., *Perfluorooctanoic Acid (PFOA) Exposures and Incident Cancers Among Adults Living Near a Chemical Plant*, 121 ENVTL. HEALTH PERSP. 1313 (2013), <http://www.ncbi.nlm.nih.gov/pubmed/24007715>.
61. Verónica M. Vieira et al., *Perfluorooctanoic Acid Exposure and Cancer Outcomes in a Contaminated Community: A Geographic Analysis*, 121 ENVTL. HEALTH PERSP. 318 (2013) (linking PFOA exposure to testicular, kidney, prostate, and ovarian cancers and non-Hodgkin lymphoma).
62. Vienna, West Virginia SDWIS Information, U.S. Env'tl. Prot. Agency, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "OH" in the "Primacy Agency" drop-down menu; then search "Tupper Plains/Chester" in the "Water System Name" field) (last visited July 22, 2016).
63. Williamstown, West Virginia SDWIS Information, U.S. Env'tl. Prot. Agency, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:200:::NO:::> (select "WV" in the "Primacy Agency" drop-down menu; then search "Williamstown" in the "Water System Name" field) (last visited July 22, 2016).
64. Winquist et al., *Design, methods, and population for a study of PFOA health effects among highly exposed Mid-Ohio Valley community residents and workers*, 121 ENVTL. HEALTH PERSP. 893 (2013).
65. Wood County, West Virginia Census Data, U.S. Census Bureau, <http://factfinder.census.gov/bkmk/table/1.0/en/PEP/2012/PEPAGESEX/05000000US54107> (last visited July 20, 2016).